IEEE 802.3 Working Group
November 2020 Plenary Session

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Web site: www.ieee802.org/3

Current IEEE 802.3 activities

IEEE 802.3 Task Forces
  - IEEE P802.3ck 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces
  - IEEE P802.3cp Bidirectional 10 Gb/s, 25 Gb/s and 50 Gb/s Optical Access PHYs
  - IEEE P802.3cr Isolation (Maintenance #14) Task Force
  - IEEE P802.3cs Increased-reach Ethernet optical subscriber access (Super-PON)
  - IEEE P802.3ct 100 Gb/s over DWDM systems
  - IEEE P802.3cu 100 Gb/s and 400 Gb/s over SMF at 100 Gb/s per Wavelength
  - IEEE P802.3cv Power over Ethernet (Maintenance #15)
  - IEEE P802.3cw 400 Gb/s over DWDM systems
  - IEEE P802.3cx Improved PTP Timestamping Accuracy
  - IEEE P802.3cy Greater than 10 Gb/s Electrical Automotive Ethernet Task Force
  - IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet Task Force
  - IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement Task Force
  - IEEE P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force

IEEE 802.3 Ad Hoc
  - IEEE 802.3 New Ethernet Applications Ad Hoc
  - IEEE 802.3 Power Distribution Coordinating Committee (PDCC) Ad Hoc

IEEE 802.3 Call for Interest
  - IEEE 802.3 Beyond 400 Gb/s Ethernet call for interest

IEEE 802.3 Maintenance

Plan

Consider new maintenance requests

Review status of outstanding maintenance requests

IEEE P802.3 (IEEE 802.3dc) Ethernet revision project

Adoption of IEEE 802.3 standards by ISO/IEC SC6

Consider any other maintenance business

Plenary session teleconference planned for 15h00 UTC Tuesday 10th November 2020

Web page

http://www.ieee802.org/3/maint/index.html

IEEE P802.3ck 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces Task Force

Description

This project is to specify additions to and appropriate modifications of IEEE Std 802.3 to add Physical Layer specifications and Management Parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s electrical interfaces based on 100 Gb/s signaling

Web site: http://ieee802.org/3/ck/index.html

Status

Draft D1.3 sent out for 4th Task Force review

Plan

Consideration of comments received against draft D1.3

Continue work towards technically complete draft for working group ballot

First plenary session teleconference planned for 17h00 UTC Tuesday 11th November 2020

IEEE P802.3cp Bidirectional 10 Gb/s, 25 Gb/s, and 50 Gb/s Optical Access PHYs Task Force

Description

Define physical layer specifications and management parameters for symmetric bidirectional 10 Gb/s, 25 Gb/s, and 50 Gb/s operation over single strand of single mode fiber of at least 10 km

Web site: http://ieee802.org/3/cp/index.html

Status

Draft D2.2 sent out for 2nd Working Group recirculation ballot

Plan

Consideration of comments received against draft D2.2

Prepare for request to proceed to Standards Association ballot

First plenary session teleconference planned for 13h00 UTC Tuesday 10th November 2020

IEEE P802.3cr Isolation
(Maintenance #14) Task Force

Description

Replace references to the IEC 60950 series of standards (including IEC 60950-1 "Information technology equipment - Safety - Part 1: General requirements") with appropriate references to the IEC 62368 "Audio/video, information and communication technology equipment" series and make appropriate changes to the standard corresponding to the new references

Web site: http://ieee802.org/3/cr/index.html

Status

Draft D3.3 sent out for 3rd Standards Association recirculation ballot

Plan

Consideration of comments received against draft D3.3

Prepare for request to proceed to RevCom submittal

Plenary session teleconference planned for 15h00 UTC Tuesday 17th November 2020

IEEE P802.3cs Increased-reach Ethernet optical subscriber access (Super-PON) Task Force

Description

Define physical layer specifications and management parameters for optical subscriber access supporting point-to-multipoint operations using wavelength division multiplexing over an increased-reach (up to at least 50 km) passive optical network (PON)

Web site: http://ieee802.org/3/cs/index.html

Status

Baseline proposal selection to satisfy objectives and draft development

Draft D1.2 sent out for 9th Task Force review

Plan

Continue to work on selection of a set of baseline proposals

Consideration of comments received against draft D1.2

Plenary session teleconference planned for 19h00 UTC Wednesday 11th November 2020

IEEE P802.3ct 100Gb/s over DWDM systems Task Force

Description

Define physical layer specifications and management parameters for the transfer of Ethernet format frames at 100 Gb/s at reaches greater than 10 km over DWDM systems

Web site: http://ieee802.org/3/ct/index.html

Status

Draft D3.0 sent out for initial Standards Association ballot

Plan

Consideration of comments received against draft D3.0

Plenary session teleconference planned for 15h00 UTC Monday 16th November 2020

IEEE P802.3cu 100 Gb/s and 400 Gb/s over SMF at 100 Gb/s per Wavelength Task Force

Description

Define additions to and appropriate modifications of IEEE Std 802.3 to add PHY specifications and Management Parameters for 100 Gb/s and 400 Gb/s Ethernet optical interfaces for reaches up to 10 km based on 100 Gb/s per wavelength optical signaling.

Web site: http://ieee802.org/3/cu/index.html

Status

Draft D3.1 sent out for 1st Standards Association recirculation ballot

Plan

Consideration of comments received against draft D3.1

Prepare for request to proceed to RevCom submittal

Plenary session teleconference planned for 16h30 UTC Monday 9th November 2020

IEEE P802.3cv Maintenance #15: Power over Ethernet Task Force

Description

Editorial and technical corrections, refinements, and clarifications to Clause 145, Power over Ethernet, and related portions of the standard. No new features will be added by this project.

Web site: http://ieee802.org/3/cv/index.html

Status

Draft D2.2 sent out for 2nd Working Group recirculation ballot

Ballot closed on 16th October 2020 with 100% approval and no comments

Plan

Request to proceed to Standards Association ballot at IEEE 802.3 Mid-session plenary

Task Force will not be meeting during November 2020 plenary session

IEEE P802.3cw 400 Gb/s over DWDM Systems Task Force

Description

Define physical layer specifications and management parameters for the transfer of Ethernet format frames at 400 Gb/s at reaches greater than 10 km over DWDM systems.

Web site: http://ieee802.org/3/cw/index.html

Status

Selecting and refining baseline proposals to develop D1.0 to initiate Task Force Review

Plan

Selecting set of baseline proposals to satisfy project objectives

Plenary session teleconference planned for 15h00 UTC Monday 16th November 2020

IEEE P802.3cx Improved PTP timestamping accuracy Task Force

Description

Define optional enhancements to Ethernet support for time synchronization protocols to provide improved timestamp accuracy in support of ITU-T Recommendation G.8273.2 'Class C' and 'Class D' system time error performance requirements.

Web site: http://ieee802.org/3/cx/index.html

Status

Selecting set of baseline proposals to satisfy project objectives

Plan

Selecting set of baseline proposals to satisfy project objectives

Plenary session teleconference planned for 15h00 UTC Tuesday 17th November 2020

IEEE P802.3cy Greater than 10 Gb/s Electrical Automotive Ethernet Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 to add greater than 10 Gb/s electrical Physical Layer specifications for symmetrical and asymmetrical operation and management parameters for media and operating conditions for applications in the automotive environment.

Web site: http://ieee802.org/3/cy/index.html

Status

Selecting set of baseline proposals to satisfy project objectives

Meeting plan

Continue to work on selection of a set of baseline proposals

First plenary session teleconference planned for 15h00 UTC Wednesday 18th November 2020

IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 to add Physical Layer specifications and management parameters for multi-gigabit optical Ethernet for application in the automotive environment.

Web site: http://ieee802.org/3/cz/index.html

Status

Selecting set of baseline proposals to satisfy project objectives

Meeting plan

Continue to work on selection of a set of baseline proposals

First plenary session teleconference planned for 13h00 UTC Wednesday 18th November 2020

IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement Task Force

Description

Specify additions and modifications of the Physical Layer (including reconciliation sublayers), management parameters, Ethernet support for time synchronization protocols, and optional power delivery supporting multiple powered devices on the 10 Mb/s mixing segment.

Web site: http://ieee802.org/3/da/index.html

Status

Selecting set of baseline proposals to satisfy project objectives

Meeting plan

Continue to work on selection of a set of baseline proposals

Plenary session teleconference planned for 15h00 UTC Wednesday 18th November 2020

IEEE P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force

Description

Specify additions to and appropriate modifications of IEEE Std 802.3 and adds Physical Layer specifications and management parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s Ethernet optical interfaces for server attachment and other intra-data center applications using 100 Gb/s signaling over optical fiber

Web site: http://ieee802.org/3/db/index.html

Status

Selecting set of baseline proposals to satisfy project objectives

Meeting plan

Continue to work on selection of a set of baseline proposals

First plenary session teleconference planned for 17h00 UTC Thursday 12th November 2020

IEEE 802.3 New Ethernet Applications (NEA) Industry Connections Ad Hoc

Description

The goal of this activity is to assess requirements for new Ethernet-based applications, identify gaps not currently addressed by IEEE 802.3 standards, and facilitate building industry consensus towards proposals to initiate new standards development efforts

Web site: http://ieee802.org/3/ad_hoc/ngrates/index.html

Status

Two year extension approved on 8th October 2020

Meeting plan

IEEE 802.3 Beyond 400 Gb/s Ethernet call for interest consensus building meeting

Thursday 29th October 2020 from 14h00 to 16h00 UTC

IEEE 802.3 Beyond 400 Gb/s Ethernet call for interest

The IEEE 802.3 2020 Ethernet Bandwidth Assessment examined a multitude of applications and forecasts a broad diversity in network traffic growth rates by 2025 ranging from 2.3x to 55.4x the amount of traffic these same applications experienced in 2017. This same assessment also examined the underlying factors of bandwidth growth, i.e. users, access rates, and applications, and highlighted the forecasted growth of these factors, which will only provide further pressure on future network bandwidth requirements. Furthermore, the COVID-19 pandemic, which occurred after the completion of the 2020 Ethernet Bandwidth Assessment, highlighted the critical role of networking in everyday life. The importance of these networks to support the bandwidth demand of these times cannot be understated.

The development of a new Ethernet rate and physical layer solutions supporting greater than 400 Gb/s will provide the industry with the next solution set it needs to address the bandwidth demands of the various applications examined, such as mobile, data center, and IP video. It is also recognized that any signaling rates used for higher speed physical layer specifications may be applicable to creating physical layer specifications for existing Ethernet rates, which would enable optimized solutions to meet bandwidth demands throughout network architectures.

This call for interest is to request the formation of the "Beyond 400 Gb/s Ethernet" Study Group to consider the development of solutions supporting Ethernet rates greater than 400 Gb/s, and the application of any signaling rates used to support Ethernet rates greater than 400 Gb/s to existing Ethernet rates.

A call for interest consensus building teleconference meeting has been scheduled to occur on Thursday 29th October 2020 from 14h00 to 16h00 UTC. The vote to determine if a Study Group will be formed will take place at the IEEE 802.3 Closing Plenary teleconference meeting on Thursday 19th November.

IEEE 802.3 Officers, Subgroup Chairs and Vice-Chairs

IEEE 802.3 Chair: David Law <dlaw@hpe.com>

IEEE 802.3 Vice Chair: Adam Healey <adam.healey@broadcom.com>

IEEE 802.3 Secretary: Jon Lewis <jon.lewis@dell.com>

IEEE 802.3 Executive Secretary: Steve Carlson <scarlson@ieee.org>

IEEE 802.3 Treasurer: Valerie Maguire <valerie_maguire@siemon.com>

IEEE 802.3 Task Force chairs

IEEE P802.3ck 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces: Elizabeth Kochuparambil <edonnay@cisco.com>

IEEE P802.3cp Bidirectional 10 Gb/s, 25 Gb/s and 50 Gb/s Optical Access PHYs: Frank Effenberger <frank.effenberger@huawei.com>

IEEE P802.3cr Isolation (Maintenance #14) Task Force: Jon Lewis <jon.lewis@dell.com>

IEEE P802.3cs Increased-reach Ethernet optical subscriber access: (Super-PON): Claudio DeSanti <cds@ieee.org>

IEEE P802.3ct 100 Gb/s and 400 Gb/s over DWDM systems: John D'Ambrosia <jdambrosia@ieee.org>

IEEE P802.3cu 100 Gb/s and 400 Gb/s over SMF at 100 Gb/s per Wavelength: Mark Nowell <mnowell@cisco.com>

IEEE P802.3cv Power over Ethernet (Maintenance #15): Chad Jones <cmjones@cisco.com>

IEEE P802.3cx Improving PTP Timestamping Accuracy on Ethernet Interfaces: Steve Gorshe <steve.gorshe@microchip.com>

IEEE P802.3cy Greater than 10 Gb/s Electrical Automotive Ethernet Task Force: Steve Carlson <scarlson@ieee.org>

IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet Task Force: Bob Grow <bob.grow@ieee.org>

IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement Task Force: Chad Jones <cmjones@cisco.com>

IEEE P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force: Robert Lingle <rlingle@ofsoptics.com>

IEEE 802.3 Task Force vice-chairs

IEEE P802.3ck 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces: Kent Lusted <kent.c.lusted@intel.com>

Upcoming meetings

Please see http://www.ieee802.org/3/calendar.html for latest calendar of meetings

State of the standard
IEEE Std 802.3-2018 Revision

IEEE Std 802.3-2018 Standard for Ethernet
8 Books (Sections) 14-Jun-18/31-Aug-18*

Section 1 Clause 1 to 20 Annex A to H, 4A	Section 2 Clause 21 to 33 Annex 22A to 33E	Section 3 Clause 34 to 43 Annex 36A to 43C	Section 4 Clause 44 to 55 Annex 44A to 55B	Section 5 Clause 56 to 77 Annex 57A to 76A	Section 6 Clause 78 to 95 Annex 83A to 93C	Section 7 Clause 96 to 115 Annex 97A to 115A	Section 8 Clause 116 to 126 Annex 119A to 120E
CSMA/CD Overview MAC PLS/AUI 10BASE5 MAU 10BASE2 MAU 10BROAD36 MAU 10BASE-T MAU 10BASE-F MAUs 10 Mb/s Repeater 10 Mb/s Topology 10BASE-Te 1BASE5 DTE & MAU Mgmt Repeater Mgmt	100 Mb/s Overview MII 100BASE-T2 100BASE-T4 100BASE-TX 100BASE-FX 100Mb/s Repeater 100Mb/s Topology MAC Control Auto-Negotiation (AN) Management DTE Power	1000 Mb/s Overview GMII 1000BASE-X AN 1000BASE-SX 1000BASE-LX 1000BASE-CX 1000BASE-T 1000 Mb/s Repeater 1000 Mb/s Topology	10 Gb/s Overview MDC/MDIO XGMII XAUI XSBI 10GBASE-SR 10GBASE-LR 10GBASE-ER 10GBASE-SW 10GBASE-LW 10GBASE-EW 10GBASE-LX4 10GBASE-CX4 10GBASE-T	Subscriber Access Networks (SA) Overview OAM MPMC 100BASE-LX10 100BASE-BX10 1000BASE-LX10 1000BASE-BX10 1000BASE-PX10 1000BASE-PX20 10GBASE-PR 10/1GBASE-PRX 10PASS-TS 2BASE-TL SA Topology 10GBASE-LRM Backplane Overview 1000BASE-KX 10GBASE-KX4 10GBASE-KR Backplane AN BASE-R FEC	EEE LLDP TLVs Time Sync RS-FEC 40/100G Overview 40GBASE-KR4 40GBASE-CR4 40GBASE-SR4 40GBASE-FR 40GBASE-LR4 40GBASE-ER4 100GBASE-CR10 100GBASE-SR10 100GBASE-KR4 100GBASE-KP4 100GBASE-CR4 100GBASE-SR4 100GBASE-LR4 100GBASE-ER4	100BASE-T1 1000BASE-T1 Single-Pair AN MAC Merge 10GPASS-XR EPoC PHY Link MPMC for EPoC PoDL 25Gb/s Overview 25GBASE-CR/CR-S 25GBASE-KR/KR-S 25GBASE-SR 25GBASE-LR 25GBASE-ER 25GBASE-T 40GBASE-T 1000BASE-RHA/B/C	200 Gb/s and 400 Gb/s Overview 200GBASE-DR4 200GBASE-FR4 200GBASE-LR4 400GBASE-SR16 400GBASE-DR4 400GBASE-FR8 400GBASE-LR8 2.5 Gb/s and 5 Gb/s Overview 2.5GBASE-T 5GBASE-T

State of the standard
Current amendments

IEEE Std 802.3-2018 amendments

IEEE Std 802.3cb-2018

Amendment 1: Physical Layer Specifications and Management Parameters for 2.5 Gb/s and 5 Gb/s Operation over Backplane

27-Sep-18/04-Jan-19*

IEEE Std 802.3cg-2019

Amendment 5: Physical Layers Specifications and Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of Conductors

7-Nov-19/5-Feb-20*

IEEE Std 802.3ca-2020

Amendment 9:Physical Layer Specifications and Management Parameters for 25 Gb/s and 50 Gb/s Passive Optical Networks

4-Jun-20/30-Jun-20*

IEEE Std 802.3bt-2018

Amendment 2: Physical Layer and Management Parameters for Power over Ethernet over 4 pairs

27-Sep-18/31-Jan-18*

IEEE Std 802.3cq-2020

Amendment 6: Maintenance #13: Power over Ethernet over 2 pairs

30-Jan-20/13-Mar-20*

IEEE Std 802.3cd-2018

Amendment 3: Media Access Control Parameters for 50 Gb/s and Physical Layers and Management Parameters for 50 Gb/s, 100 Gb/s, and 200 Gb/s Operation

5-Dec-18/15-Feb-19*

IEEE Std 802.3cm-2020

Amendment 7: Physical Layer and Management Parameters for 400 Gb/s over Multimode Fiber

30-Jan-20/30-Mar-20*

IEEE Std 802.3cn-2019

Amendment 4: Physical Layers and Management Parameters for 50Gb/s, 200Gb/s, and 400Gb/s Operation over Single-Mode Fiber

7-Nov-18/20-Dec-19*

IEEE Std 802.3ch-2020

Amendment 8:Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Automotive Electrical Ethernet

4-Jun-20/30-Jun-20*

State of the standard
Other IEEE 802.3 standards

IEEE Std 802.3.1-2013

IEEE Standard for
Management Information Base
(MIB) Definitions for Ethernet

14-Jun-13/02-Aug-13*

IEEE Std 802.3.2-2019

IEEE Standard for Ethernet YANG
Data Model Definitions

21-Mar-19/21-Jun-19*

State of the standard
IEEE 802.3 current status overview

Call for interest

Study Group

Task Force

IEEE 802.3 Beyond 400 Gb/s Ethernet call for interest

IEEE P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber
Baseline section

IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement
Baseline section

IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet
Baseline section

IEEE P802.3cy Greater than 10 Gb/s Electrical Automotive Ethernet
Baseline section

IEEE P802.3cx Improved PTP Timestamping Accuracy
Baseline section

IEEE P802.3cw 400 Gb/s over DWDM systems
Baseline section

IEEE P802.3ck 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces
D1.3 Task Force Review

IEEE P802.3cs Increased-reach Ethernet optical subscriber access (Super-PON)
D1.2 Task Force Review

IEEE P802.3cv Maintenance #15: Power over Ethernet Task Force
D2.2 Working Group ballot

IEEE P802.3cp Bidirectional 10 Gb/s, 25 Gb/s, and 50 Gb/s Optical Access PHYs
D2.2 Working Group ballot

IEEE P802.3ct 100 Gb/s over DWDM systems Task Force
D3.0 Standards Association ballot

IEEE P802.3cu 100 Gb/s and 400 Gb/s over SMF at 100 Gb/s per Wavelength
D3.1 Standards Association ballot

IEEE P802.3cr Isolation (Maintenance #14)
D3.3 Standards Association ballot

Progress to standard